

## **ABSTRACT**

A peak to average power ratio signal is generated from a first mapping function that selects the peak to average power ratio signal that corresponds to the data rate or data format of the signal to be transmitted. The selected peak to average power ratio signal is summed with a desired average transmit power signal. The resulting summation signal is input to a second effectively continuously valued mapping function comprising a table that has a plurality of power amplifier control signal values each with a corresponding peak transmit power. Each peak transmit power signal value results in a power amplifier control signal value that achieves the best possible transmitter power efficiency while still meeting out of band spurious emissions and waveform quality requirements. The summation signal value maps to one of the power amplifier control signal value that is then used to adjust a parameter such as bias of the power amplifier.